Patent Claims

1. Wiper drive (2, 202, 302, 402, 502, 602) comprising a housing (4), a reversing motor (6) and a gear mechanism (8) connected downstream of the reversing motor (6), wherein a swaying element (12) for driving at least one wiper arm or a wiper arm rod is provided on the gear mechanism output shaft (10), and wherein the operating range of the swaying element (12) lies within a pivoting range (98) which is delimited by two mechanical stops, characterized in that at least one stop (32) is designed such that it can be removed and/or moved in such a way that the swaying element (12), when the wiper drive is mounted on a support frame (20), can be moved from a first mounting position (22), which lies outside the pivoting range (98), into the pivoting range (98) without being obstructed by the stop (32).

2. Wiper drive (2, 202, 302, 402) according to the preamble of Claim 1 or according to Claim 1, characterized in that at least one stop (32) is arranged on at least one add-on element (26) such that it cannot be removed, wherein the add-on element (26) can be releasably fixed on a component of the wiper drive (2), in particular on the housing (4).

3. Wiper drive (202) according to Claim 2, characterized in that two add-on elements (226, 248) are provided, on each of which a stop (232, 252) is provided.

4. Wiper drive (2, 202) according to either of Claims 2 and 3, characterized in that at least one add-on element (26) is suitable for exerting a retaining function for a connection between the housing (4) and a support frame (20).

5. Wiper drive (202, 302, 402) according to one of Claims 2 to 4, characterized in that the add-on element (476) can be releasably fixed on a component of the wiper drive (402), in particular on the housing (404), in various orientations and/or at various positions.

6. Wiper drive (2, 202, 302, 402) according to one of Claims 2 to 5, characterized in that the add-on element (376) can be fixed on a component of the wiper drive (302), in particular on the housing (304), at at least one, preferably at several, fixing points (360, 362, 364).

7. Wiper drive (2, 202, 302, 402) according to one of Claims 2 to 6, characterized in that the add-on element (26) is designed as a shaped part made of sheet metal.

8. Wiper drive (202) according to one of Claims 2 to 7, characterized in that the add-on element (226) is non-releasably connected to the support frame (220).

9. Wiper drive (202) according to Claim 8, characterized in that the non-releasable connection (246) is produced by welding, soldering, adhesive bonding or riveting.

10. Wiper drive (502, 602) according to Claim 1, characterized in that at least one stop is provided as

a separate component (594) which can be fixed on a component of the wiper drive (502), in particular on the housing (504).

11. Wiper drive (602) according to Claim 10, characterized in that two stops (690, 694) are provided.

12. Wiper drive (502, 602) according to Claim 10 or 11, characterized in that the at least one stop (594) is provided as a pin.

13. Wiper drive (502, 602) according to Claim 12, characterized in that the pin (594) is slidably arranged in a component of the wiper drive (502), in particular in the housing (504), and extends essentially perpendicular to the plane in which the swaying element (512) moves.

14. Wiper drive (702) comprising a housing (704), a reversing motor (706) and a gear mechanism (708) connected downstream of the reversing motor (706), wherein a swaying element (712) for driving at least one wiper arm or a wiper arm rod is provided on the gear mechanism output shaft (710), and wherein the operating range of the swaying element (712) lies within a pivoting range (798) which is delimited by two mechanical stops (788, 792), characterized in that the stops (788, 792) cooperate with a stop element (796) which is provided on or in the swaying element (712) such that it can be moved and/or removed.

15. Wiper drive (702) according to Claim 14, characterized in that the stops (788, 792) are made in

one piece with a component of the wiper drive (702), in particular with the housing (704).

16. Wiper drive (2, 202, 302, 402, 502, 602, 702) according to one of the preceding claims, characterized in that the support frame is designed as a tubular element (20).

17. Wiper drive (2, 202, 302, 402, 602, 702) according to one of the preceding claims, characterized in that the swaying element (12) is non-releasably connected to the gear mechanism output shaft (10).

18. Method for mounting a wiper drive (202) on a support frame (220), wherein the wiper drive (202) comprises a housing (204), a reversing motor (206) and a gear mechanism (208) connected downstream of the reversing motor (206), wherein a swaying element (212) for driving at least one wiper arm or a wiper arm rod is provided on the gear mechanism output shaft (210), and wherein the operating range of the swaying element (212) lies within a pivoting range (298) which is delimited by two mechanical stops (232, 252), characterized by the following steps:

a) mutual orientation and positioning of housing (204) and support frame (220), wherein the swaying element (212) assumes a position outside its pivoting range (298),

b) mounting of a first stop (232) on a component of the wiper drive (202), in particular on the housing (204),

c) fixing of the housing (204) on the support frame (220),

d) pivoting of the swaying element (212) into the pivoting range (298),

e) mounting of a second stop (252) on a component of the wiper drive (202), in particular on the housing (204).

19. Method for mounting a wiper drive (2) on a support frame (20) according to Claim 18, wherein the steps are carried out in the order a), d), b), e), c).

20. Method for mounting a wiper drive (302, 402, 502, 602) on a support frame (620) according to Claim 18, wherein the steps are carried out in the order a), c), d), b), e).

21. Method for mounting a wiper drive (702) on a support frame (720) according to Claim 20, wherein steps b) and e) are replaced by the displacement of a stop element (796) which is provided on or in the swaying element (712) such that it can be moved and/or removed.

22. Method according to one of Claims 18 to 21 for mounting a wiper drive according to one of Claims 1 to 17.